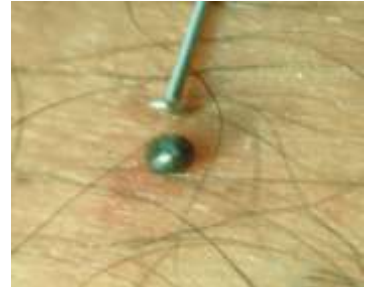


Tick Removal

To remove a tick, use thin-tipped tweezers or forceps to grasp the tick as close to the skin surface as possible. Pull the tick straight upward with steady even pressure. This should remove the tick with the mouthparts intact. Commercial tick removal devices have been shown to vary widely in their efficacy for removing nymphal blacklegged ticks: some worked in every attempt, some failed in every attempt, some were in between. Tick removal devices that have been shown to successfully remove *I. scapularis* nymphs attached for 48 hours in all attempts in a recent study include #4 forceps, Original Tick Kit (Tick Kit, Inc.), Pick-Tick (Encepur, Chiron), Pro-Tick Remedy (SCS, Ltd.), and the Nick Nipper (Joslyn Designs, Inc.). The mouthparts of larval and nymphal ticks will seldom be left in the skin. With proper removal, they usually come out intact. Adult ticks are more difficult to remove intact because of the longer mouthparts. If the mouthparts break off, it will not change the chance of getting Lyme disease. Spirochetes in the mouthparts or cement plug, and therefore the feeding lesion, means the tick was removed too late and transmission has already occurred. Do not use other methods of tick removal (e.g. petroleum jelly to suffocate the tick, heat from matches to make the tick back out or gasoline or other chemicals); they are not effective and may potentially increase the risk of pathogen transmission.



After removing the tick:

- Disinfect the area with rubbing alcohol or another skin disinfectant; a topical antibiotic also may be applied.
- Save the tick for reference and, in some cases, testing (if available). A live tick can be placed in a crush proof container with a blade of grass to keep it alive (a sealable plastic bag also will work). A small plastic vial is best. Dead ticks are tested by DNA methods and should be held dry in a crush proof container. For longterm storage, ticks are held in 70-80% ethyl alcohol (rubbing alcohol will work). Avoid placing ticks in black film containers or using cellophane tape to mount the tick to paper, a note card or a slide if it needs to be identified or tested. Ticks under cellophane tape are difficult to handle. If the tick is removed by a health professional, ask to keep the tick for future reference or testing.
- Note the site and date of the bite.
- Watch for signs and symptoms of Lyme disease or other tick-associated diseases for 30 days or consider prophylactic treatment if the tick is engorged or infection rates are high (see below). Watch for evidence of secondary infection.



Localized tick bite reactions develop rapidly and can sometimes resemble a small Lyme disease rash, but these transient reactions generally disappear in 24-48 hours and do not continue to expand like a characteristic erythema migrans rash. Mouthparts left in the skin may cause irritation as the body attempts to absorb or reject the foreign tick tissue (analogous to a minute splinter that is difficult to remove) with a slight risk of secondary bacterial infection. A foreign body granuloma may persist for weeks, especially if the mouthparts remain. A physician should be consulted if there is evidence of infection.